

REMARKS

The Examiner's rejections and Final Office Action of September 15, 2005 have been carefully considered. Claims 46 and 62 have been amended so as to obviate the Examiner's objections of Section 2. The rejections of Claims 46 through 48 as anticipated in view of Wong do not comply with the standards required for anticipation and are defective as explained below. They should be withdrawn.

Anticipation requires that:

"The identical invention must be shown in as complete detail as is contained in the ... claim... The elements must be arranged as arranged as required by the claim." (MPEP 8TH Ed., Rev. 2 (May 2004)) Page 2100-73.

Unlike the requirements set forth above relative to a valid anticipation rejection, the Examiner's reference to "gas sensor (28)" in Wong clearly fails to correspond to the claimed:

"a gas sensor carried by the housing, the sensor defining an internal sensing region with at least a first opening for an inflow of gas carrying fluid." (pending claim 46)

The gas sensor (28) cited by the Examiner in rejecting claims 46 through 48 clearly does not define "an internal sensing region with at least a first opening for an inflow of gas carrying fluid" as claimed.

For at least the above reasons none of claims 46 through 48 are anticipated by Wong. Further, the Examiner has referred to "mesh (24)" in support of the anticipation rejection of claims 46 through 48. The element 24 is illustrated in Fig. 2 of Wong and is shaded with shading of a type which would be used for a nonconductive element. By way of contrast, element 16 of Wong is shaded as a conductive element.

Claim 46 requires:

"a first, metal, condenser with second openings therethrough, the condenser is carried in the housing adjacent to the sensor with the first and second openings aligned for a fluid inflow from outside of the housing into the sensing region" (pending claim 46)

Not only is Wong's mesh 24 non conductive, it is located in a different region entirely than the Examiner's gas sensor (28) and completely fails to comply with the above-quoted wording from claim 46. Thus, for at least the above reasons none of claims 46 through 48 are anticipated by Wong U.S. Patent 5,502,308 and those rejections should be withdrawn.

Attached hereto is a Declaration of co-inventor Dragan P. Petrovic which traverses the assertions made in numbered section 4 of the Office Action by the Examiner relative to claims 46-61 and the enablement requirement. As is pointed out by Dr. Petrovic, the application does comply with the enablement requirement, specifically relative to claims 46 and 55, the only claims discussed with specificity by the Examiner. As explained by Dr. Petrovic:

"the Examiner's attention is directed to an embodiment shown in Figure 1 of the pending application (Figs. 2-5 show other embodiments) which illustrates a housing 12 that carries a housing or gas sensor 18 for sensing a concentration of a selected gas. The housing or gas sensor 18 defines an internal region (bounded by four sides 18a, 18b, 18c, and 18d) with a first opening for an inflow of gas (see arrow in Fig. 1 labeled "gas flow").

The region bounded by the walls 18a-18d defines a sensing chamber 30a and a reference chamber 30b. Inflowing gas passes through filter 40, condenser 42 and into the region bounded by sides 18a-18d where the concentration of a selected gas can be sensed via sensing chamber 30a and reference chamber 30b. 30a,b are open to each other along plane P.

Further relative to Fig. 1, as described in Paragraph 35 of the published application:

"Housing 18 is covered, at least in part by a filter 40, for example, a semi-permeable membrane, and an adjacent condenser 42 both illustrated in phantom. Filter 40 excludes undesirable particulate matter and reduces inflow velocity such that movement of gas in housing 18 substantially results from diffusion.

The condenser 42 extracts gas borne water vapor from the inflow by causing it to condense out on the element 42 prior to flowing into either of the chambers 30a, b. It will be understood that a variety of condenser configurations, some examples of which are discussed below, come within the spirit and scope of the invention."

In Fig. 1 condenser 42 is clearly adjacent to housing, gas sensor, 18. The subsequent discussion of the application refers to Figs. 2 through 5.

Fig. 2 illustrates a perforated metal condenser 42-1 having openings 54 into a gas sensing chamber 58 via opening 56. As was the case with Fig. 1 where condenser 42 is adjacent to gas sensor or housing 18, condenser 42-1 would be understood by those of skill in the art to be a metal condenser, as claimed, with openings 54 therethrough.

Those openings 54 are aligned with gas inflow opening 56 to enable gas to flow into gas sensing chamber 58."

Further, as pointed out in the attached Declaration, one of skill in the art "would understand reading the disclosure of the present application as well as viewing Figs. 1 through 5 thereof, that pending claim 46 is further supported by the following exemplary elements illustrated in various of Figs. 1 through 5:

"A housing" -- see housing 12 Fig. 1, housing 12-1 Fig. 2, 12-1 Fig. 3;

"A gas sensor carried by the housing, the sensor defining an internal sensing region with at least a first opening for an inflow of gas carrying fluid" -- see gas sensor 18, Fig. 1, 18-1 Fig. 2, 18-2 Fig. 3, 18-1 Fig. 4, 18-2 Fig. 5; as illustrated in Fig. 2, an opening 56 is provided into gas sensing chamber 58 formed by gas sensor 18-1;

"A first metal, condenser with second openings therethrough" -- see metal condenser 42 Fig. 1, 42-1 Fig. 2, 42-1 Fig. 3, 42-2 Figs. 4,5 and openings 54, Figs 2,3, as well as openings 54-1, Fig. 4;

"The condenser is carried in the housing adjacent to the sensor with the first and second openings aligned for a fluid inflow from outside of the housing into the sensing region"—Fig. 1 illustrates an arrow labeled "gas flow in" extending through filter 40, condenser 42, and regions 36a, b as described in paragraph 35 of the published application, quoted above, condenser 42 is "adjacent" to gas sensor 18;

Further, Figs. 2 through 5 illustrate gas inflow extending through openings 52, 54 and 56, Fig. 2 all of which are aligned, openings 52, 54, 56-1 Fig. 3 all of which are aligned, 52, 54-1, and 56 all of which are aligned, Fig. 4."

Thus, for all of the above reasons, one of skill in the art, familiar, with the disclosure and figures of the present application, would know how to make and/or use the present invention; and, that the Examiner is wrong in concluding:

"The specification fails to provide any disclosure of the gas sensor having an internal sensing region with at least a first opening, which is aligned with openings of a first, metal conductor." (page 3 Office Action)"

Dr. Petrovic has also explained, see attached, that the Examiner's below-quoted conclusion (relative to claim 55) on page 3 of the Office Action is erroneous:

"the specification fails to enable one of ordinary skill in the art to create a gas sensor with at least a gas inflow port, whereby condensers and a filter are located adjacent to the gas sensor so as to provide a gas inflow path through perforations located in the condensers, the filter, and the gas inflow port into the gas sensor."

In connection with the above, as described in the subject application, gas sensor 18 senses the concentration of a selected gas. The housing which includes bounding walls 18a-18d defines two interior regions, a sensing chamber and a reference chamber. These chambers are open to one another. It also carries radiant energy sensors 34a,b. Also as described in the pending application and illustrated in Fig. 1, condenser 42 is located adjacent to housing, gas sensor 18. Filter 40 at least partly overlies same.

Figs. 2 through 5 of the subject application disclose various combinations and arrangements of condensers and membranes, corresponding to condenser 42 and filter 40 of Fig 1 which can be used with gas sensors such as the gas sensor 18 disclosed in Fig. 1. Additionally, as illustrated in Fig. 1 (and repeated in Figs. 2 through 5), inflowing gas passes through one or more of the filters or membranes such as membrane 40, 40-1, 40-3, as well as one or more adjacent perforated condensers such as 42, 42-1, 42-3 and into the respective gas sensor."

He has also explained in the attached Declaration that "one of skill in the art would understand that inflowing gas diffuses through the respective filter or membranes (see paragraphs 20, 21 and 35 of the published application). Additionally, those of skill in the art would understand that the condenser elements such as 42 would be implemented with the slots or holes (see paragraph 19 of the published application), which would enable the gas to pass through the respective condenser or condensers.

The Examiner's attention is also directed, for example, to Fig. 4 of the published application. Fig. 4 illustrates two spaced apart perforated metal condensers 42-2, 42-3

with a membrane filter 40-3 located therebetween. A gas sensor 18-1 is located adjacent to that combination. The gas sensor includes a sensing chamber 58-2 with a gas inflow port 56. The gas inflow port 56 is formed in a bounding wall of sensor 18-1. There is an arrow on Fig. 4 which indicates an inflow of gas through openings 52 and housing 12-1, openings 54-1 in condenser element 42-2, through membrane filter 40-3 through openings in condenser 42-3, through opening 56 into the gas sensing chamber 58-2. One of skill in art would understand, see numbered paragraph 24 of the published application, that gas would pass or move by diffusion throughout the sensing chamber and the associated adjacent reference chamber." In Dr. Petrovic's opinion, "one of skill in the art would understand that the condenser(s) 42, 42-1, 42-2 and 42-3 are all disclosed located adjacent to a respective gas sensor such as 18, 18-1, or 18-2."

Thus, he disagrees with the Examiner's assertion that:

"the two condensers and filter are not located adjacent the inflow port of the gas sensor as the claim suggests." (page 3, Office Action)

The Examiner then goes on to state:

"The gas sensor disclosed in the specification only receives reflected radiant energy not gas as suggested by the limitations of the claim." (page 3, Office Action)

In connection with the above statement, the Examiner's attention is directed to gas sensor 18, see Fig. 1, which clearly shows an inflow of gas into the interior region bounded by the walls 18a- 18d. Similarly, each of Figs. 2 through 5 illustrates gas flow entering an adjacent gas sensor, having sensor chamber 58 see Fig. 2, having sensing chamber 58-1 see Fig. 3, having sensing chamber 58-2 see Fig. 4 and having sensing chamber 58-3 see Fig. 5 of the published application." Thus, as pointed out by Dr. Petrovic, it is clearly erroneous to conclude that the "gas sensor disclosed in the specification only receives reflected radiant energy, not gas as suggested by the limitations of the claim." (Office Action, page 3).

Appl. No.: 10/701,036

Amendment B

Responsive to a Final Office Action mailed September 15, 2005

For at least the above reasons, it is submitted that, that the specification of the present application does, in fact, enable one of skill in the art to make and/or use the claimed invention of claim 55 as well as all of the other pending claims.

Applicant's attorney will shortly contact the Examiner for the purpose of scheduling a telephone interview concerning this application.

Respectfully submitted,

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